

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number
WO 2005/029126 A1

(51) International Patent Classification⁷: **G01T 1/24**

(21) International Application Number:
PCT/IB2004/051655

(22) International Filing Date:
1 September 2004 (01.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/505,538 24 September 2003 (24.09.2003) US

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS, N.V.** [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PETRILLO, Michael, J.** [US/US]; 595 Miner Road, Cleveland, OH 44143 (US). **CORA, Sorin, V.** [CA/US]; 595 Miner Road, Cleveland, OH 44143 (US). **NAIMA, Hamid** [US/US]; 595 Miner Road, Cleveland, OH 44143 (US). **TSENG,**

Sanyi [US/US]; 595 Miner Road, Cleveland, OH 44143 (US). **VESEL, John, E.** [US/US]; 595 Miner Road, Cleveland, OH 44143 (US).

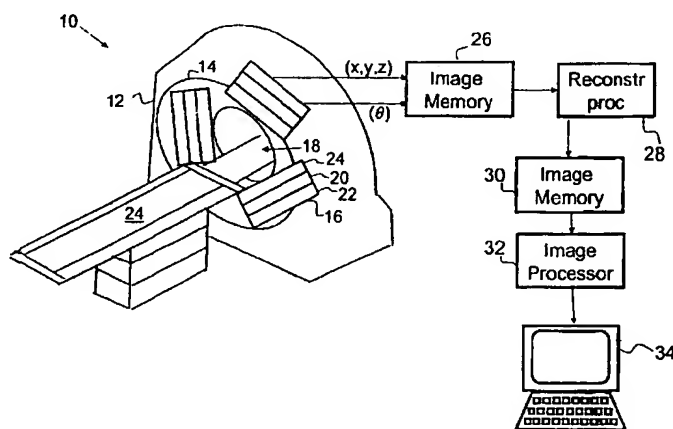
(74) Common Representative: **KONINKLIJKE PHILIPS ELECTRONICS, N.V.**; c/o SERRA, Wayne, M., 595 Miner Road, Cleveland, OH 44143 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: **ALIGNMENT METHOD AND APPARATUS FOR PIXILATED DETECTOR**



(57) Abstract: A detector (20) for a nuclear imaging system (10) includes a plurality of sockets (44) which each support an array of individual detector elements (48). Each socket (44) includes a plurality of electrical connectors (54) and socket alignment structures (72). The sockets (44), carrying the detector elements (48), are installed onto a circuit board (40). The circuit board (40) includes a plurality of electrical conductive openings (52) which electrically connect with the electrical connectors (54) and alignment structures (74) which mate with the socket alignment structures (72) to align the sockets (44) and the individual detector elements (48) to the circuit board (40). A collimator (24) is mounted and aligned to a frame (60). The frame (60) and the circuit board (40) each include aligning structures to align the collimator (24) to the circuit board (40) and the individual detector elements (48).

WO 2005/029126 A1



SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA,

SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.